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| 10/000,461 | 11/30/2001 | Peter Waksman | OAQ-013/PA-1230 | 2303 |

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| EXAMINER |
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THOMPSON, JAMES A

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| ART UNIT | PAPER NUMBER |
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2624

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,461

Applicant(s)

WAKSMAN, PETER

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 8-9, 12-14 and 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Braudaway (US Patent 5,502,458).

Regarding claim 1: Braudaway discloses providing color data for a group of pixels (column 5, lines 20-24 of Braudaway), wherein, for each pixel in the group of pixels, the color data corresponds to a color representation in an initial palette (column 5, lines 14-17 of Braudaway) at an indexed position (figures 2B-2C and column 7, lines 18-22 and lines 48-52 of Braudaway); and converting the color data for the group of pixels by using a converted color palette (column 7, lines 18-22 of Braudaway) and, for each pixel in the group of pixels, substituting the color representations in the converted color palette at the indexed position for the color data (figures 2B-2C and column 7, lines 21-30 of Braudaway).

Regarding claim 2: Braudaway discloses using a host function to determine the indexed position in the initial color palette for each of the pixels in the group of pixels (column 7, lines 21-26 of Braudaway). The host function is the function based on the normalized luminance values that is used to create

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the display specific palette for a particular display device (column 7, lines 21-26 of Braudaway).

Regarding claims 8-9: Braudaway discloses that the electronic device is a computer system (figure 1(10) and column 6, lines 28-33 of Braudaway). Since said computer system performs the steps of the flowcharts in figures 4-5 of Braudaway (column 6, lines 32-33 of Braudaway), said computer system is also clearly an image-reproducing apparatus.

Regarding claim 12: Braudaway discloses that the group of pixels comprises a row of pixels (figure 1(28) and column 6, lines 40-44 of Braudaway). Since a display is used to output the image data (figure 1(28) and column 6, lines 40-44 of Braudaway) and said display is clearly two-dimensional, then said group of pixels must comprise a row of pixels.

Regarding claim 13: Braudaway discloses providing a set of color data for pixels, said color data encoding colors for the pixels in a first color space (column 5, lines 14-17 of Braudaway); providing a first color palette for the first color space (column 5, lines 28-30 of Braudaway), wherein the first color palette holds representations of colors in the first color space in respective positions (column 5, lines 29-36 of Braudaway) and wherein each position has an associated index (figure 2B("entry") and column 7, lines 48-52 of Braudaway); for each of the pixels (column 9, lines 37-40 of Braudaway), determining an index for the pixel of a selected one of positions in the first (display-independent) color palette for given areas of the representations of colors that correspond to the color data for the pixel (column 9, lines 44-50 of Braudaway); converting the first color palette into a second (display-specific) color palette for a second color space

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(column 10, lines 4-9 of Braudaway), wherein each position in the second color palette holds a representation of a color in the second color space that corresponds to a representation of the color in the first color space at a like position in the first palette (figure 6(350-390) and column 10, lines 9-15 of Braudaway); and converting the set of color data to encode colors in the second color space, for each pixel (column 10, lines 8-13 of Braudaway), by substituting the representation of color in the second palette at the position of the index for the pixel for the color data of the pixel (column 10, lines 12-19 of Braudaway).

Regarding claim 18: Braudaway discloses a device (figure 1 (10) of Braudaway) comprising a storage facility (figure 1(15a) and column 6, lines 35-36 of Braudaway) for storing a first palette for a first (device-independent) color space (column 9, lines 44-50 of Braudaway); and a conversion facility (figure 1 (11) and column 6, lines 32-34 of Braudaway) for converting the set of pixels to representations in a second (device-specific) color space (column 10, lines 4-9 of Braudaway), said conversion facility converting the first palette for the second color space and using representations in the second palette to convert the set of pixels (figure 6(350-390) and column 10, lines 8-19 of Braudaway).

Regarding claims 17 and 19: Braudaway discloses that the method is performed by a processor (figure 1(11) and column 6, lines 30-33 of Braudaway).

Regarding claim 20: Braudaway discloses mapping color image data in the first color space to indices of an initial color palette array (column 5, lines 14-21 of Braudaway), wherein each index of the initial color palette array

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corresponds to a unique color combination in the first color space (figure 2B and column 5, lines 20-27 of Braudaway); converting the color image data mapped in the initial color palette array to a converted color palette array comprising color image data in the second color space (column 7, lines 18-22 of Braudaway); and reconstructing the group of pixels in the output color space (column 7, lines 21-30 of Braudaway).

Regarding claim 21: Braudaway discloses using a hash computer programming function to determine the indexed position in the initial color palette array for each of the pixels in the group of pixels (figure 2C("entry") and column 5, lines 53-56 of Braudaway). As is well-known in the art, a hash computer programming function directly accesses data at a specific address based on a specific key in a specific key set. In the case of the color palette taught by Braudaway, the key for the hash function is the entry number of the color palette.

Regarding claim 22: Braudaway discloses that the indexed position of the pixels is also stored in a palette index array at a location in the palette index array that corresponds to a location in the group of pixels (column 5, lines 45-53 of Braudaway).

Regarding claims 3, 14 and 23: Braudaway discloses that the initial color palette is for a (R,G,B) color space (column 7, lines 8-11 of Braudaway). Thus, the first color space is a (R,G,B) color space.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-5, 10-11, 16 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braudaway (US Patent 5,502,458) in view of Liang (US Patent 5,579,031).

Regarding claims 4, 16 and 24: Braudaway does not disclose expressly that the converted color palette, and thus the second color space, is for a (C,M,Y,K) color space.

Liang discloses converting a color palette to a (C,M,Y,K) color space (figure 9 and column 15, lines 28-32 of Braudaway). Thus, the second color space is a (C,M,Y,K) color space.

Braudaway and Liang are combinable because they are from the same field of endeavor, namely the conversion of color data from an input device color space to an output device color space so that the images look the same for both devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a (C,M,Y,K) color space for the output device color palette, as taught by Liang. The motivation for doing so would have been to be able to output an image on a printer (column 15, lines 22-23 of Liang). Therefore, it would have been obvious to combine Liang with Braudaway to obtain the invention as specified in claims 4, 16 and 24.

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Regarding claims 5 and 25: Braudaway does not disclose expressly that the converted color palette is for a (C,M,Y) color space.

Liang discloses converting a color palette (column 15, lines 28-32 of Braudaway) to a (C,M,Y) color space (column 11, line 66 to column 12, line 2 and column 12, lines 62-67 of Braudaway).

Braudaway and Liang are combinable because they are from the same field of endeavor, namely the conversion of color data from an input device color space to an output device color space so that the images look the same for both devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a (C,M,Y) color space for the output device color palette, as taught by Liang. The motivation for doing so would have been to be able to output an image on a printer (column 15, lines 22-23 of Liang), and the black (K) color is dependent upon the (C,M,Y)-values (column 12, lines 62-67 of Liang). Therefore, it would have been obvious to combine Liang with Braudaway to obtain the invention as specified in claims 5 and 25.

Regarding claim 10: Braudaway does not disclose expressly that said electronic device is a copier.

Liang discloses that the electronic device used in matching colors produces a printed output of the converted image data (column 15, lines 22-27 of Liang), and is thus a copier.

Braudaway and Liang are combinable because they are from the same field of endeavor, namely the conversion of color data from an input device color space to an output device color space so that the images look the same for both devices. At the time of the invention, it would have been obvious to a person of

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ordinary skill in the art to embody the electronic device as a copier, as taught by Liang. The motivation for doing so would have been to be able to output an image on a printer (column 15, lines 22-23 of Liang). Therefore, it would have been obvious to combine Liang with Braudaway to obtain the invention as specified in claim 10.

Regarding claim 11: Braudaway does not disclose expressly that said electronic device is a printer.

Liang discloses that the electronic device used in matching colors is a printer (column 15, lines 22-27 of Liang).

Braudaway and Liang are combinable because they are from the same field of endeavor, namely the conversion of color data from an input device color space to an output device color space so that the images look the same for both devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to embody the electronic device as a printer, as taught by Liang. The motivation for doing so would have been to be able to output a printed hard copy of an imager (column 15, lines 22-23 of Liang). Therefore, it would have been obvious to combine Liang with Braudaway to obtain the invention as specified in claim 11.

5. Claims 6-7, 15 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braudaway (US Patent 5,502,458) in view of Winkelman (US Patent 5,668,890).

Regarding claims 6-7, 15 and 26-27: Braudaway does not disclose expressly that the initial color palette, and thus the first color space, is for a grey scale color space; and the converted color palette, and thus the second color space, is for a grey scale color space.

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Winkelman discloses a grey scale color space for the initial color space, and thus the initial color palette (column 6, lines 45-50 and lines 56-59 of Winkelman). If a black-and-white original is input (column 6, lines 45-50 of Winkelman), the only the luminance (L^*) component of the CIELab color space will be used.

Winkelman further discloses that the second color space, and thus the converted color palette, is a grey scale color space (figure 20 and column 5, lines 7-14 of Winkelman). Since the input color space is grey scale due to the fact that only the luminance (L^*) component is used (column 6, lines 45-50 and lines 56-59 of Winkelman), then the output color space (figure 20 (L^*_{KOR} , a^*_{KOR} , b^*_{KOR}) must also be grey scale (only L^*_{KOR} used).

Braudaway and Winkelman are combinable because they are from the same field of endeavor, namely the conversion and correction of color spaces in digital image systems so that the image input with one device will look the same when output by another device. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a grey scale color space for the initial color palette and the converted color palette. The suggestion for doing so would have been that some images are black-and-white image (column 6, lines 45-50 of Winkelman), and thus are better represented with a color palette that uses a grey scale color space. Therefore, it would have been obvious to combine Winkelman with Braudaway to obtain the invention as specified in claims 6-7, 15 and 26-27.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

JAT
25 May 2005



THOMAS D.
~~TOMMY~~ LEE
PRIMARY EXAMINER